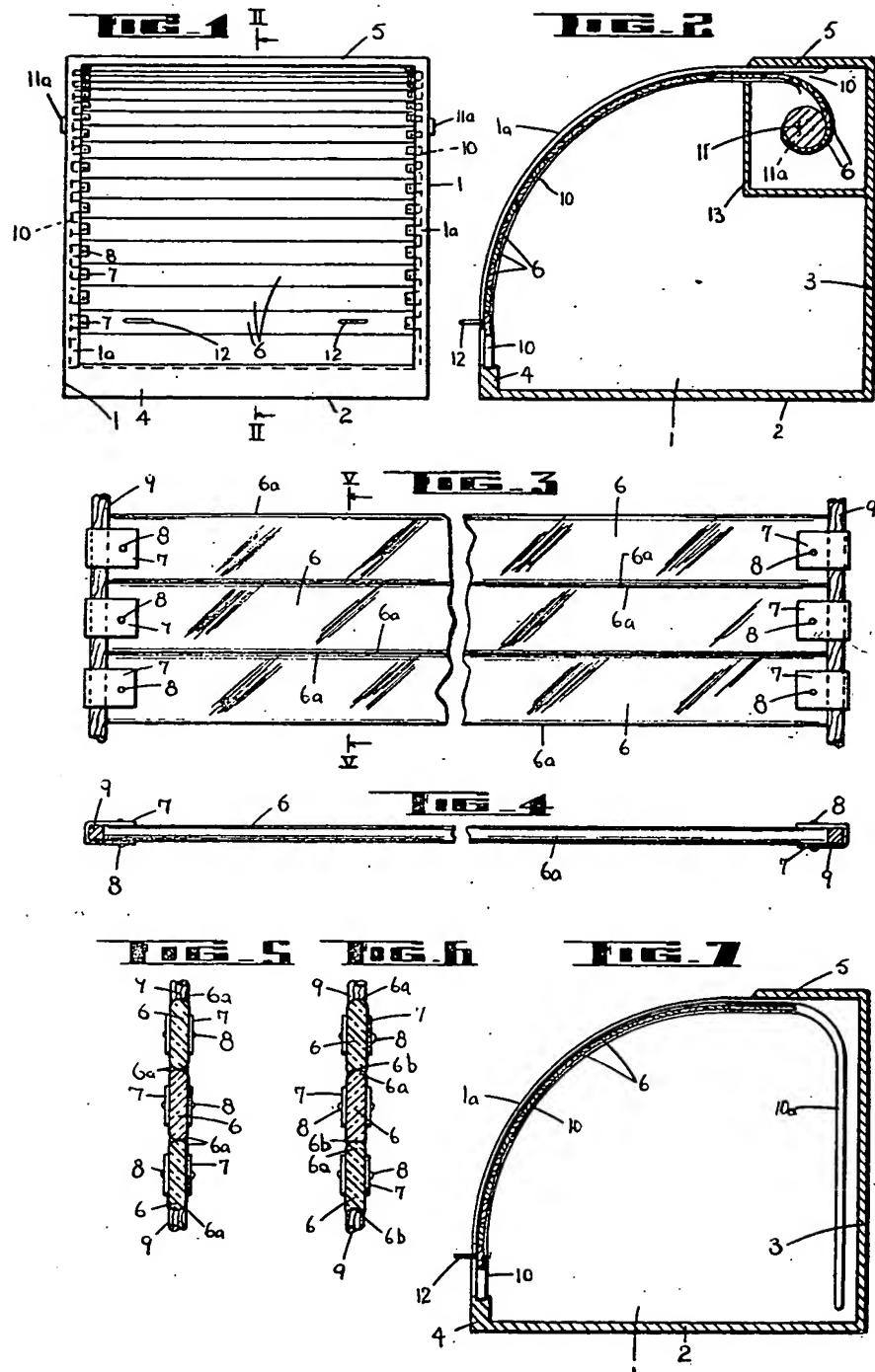


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COMMONWEALTH OF AUSTRALIA

PATENT SPECIFICATION

Complete Specification Lodged ..... 22nd February, 1955.

Application Lodged No. 7,060/55 ..... 22nd February, 1955.

Applicant (Actual Inventor) Joannes Josephus Eman.

Convention Application

(New Zealand, 7th April, 1954.)

Complete Specification Published ..... 25th August, 1955.

Complete Specification Accepted ..... 21st February, 1957.

Classification: 46.6; 54.7; 45.4; 78.71; 81.5

Drawing attached.

COMPLETE SPECIFICATION

"An improved flexible shutter or screen and a cabinet, show case, window frame or like article including such shutter or screen."

The following statement is a full description of this invention, including the best method of performing it known to me:—

One of the objects of the invention is to provide a shutter or screen which is flexible so that it can be rolled up or folded when not required for use and can be unrolled or unfolded when required for use.

Another object of the invention is to provide a shutter or screen which, while being flexible for the purpose just mentioned, is transparent or translucent so that it can be seen through or will permit of the passage of light through it when it is in operative position.

A further object of the invention is to provide a shutter or screen which, besides having the attributes to which reference has already been made, remains of simple form

so that it can easily be produced at an economic price.

A still further object of the invention is to provide a shutter or screen particularly suitable for application to cabinets, show cases, window frames or like articles.

A shutter or screen when made in accordance with the invention comprises a plurality of slats of transparent or translucent material, the slats being arranged edge-to-edge and all being provided at their ends with U-shaped clips having their creases spaced from the ends of the slats so as to provide holes through which flexible cords pass, the cords acting to connect one slat to the next and enabling the shutter or screen to be rolled, folded or bent into an inoperative position and unrolled, unfolded or bent back to an operative position.

In the application of the shutter or screen

to a cabinet, show case, window frame or like article, the clips can act as part of means provided for guiding the slats during movement of the shutter or screen to inoperative or operative position.

The slats may be made of transparent or translucent glass or synthetic resinous material.

An embodiment of the invention as applied to a cabinet, with certain modifications, is illustrated in the accompanying drawings, in which:

Figure 1 is a front elevational view of the cabinet with the shutter or screen in partly opened position;

Figure 2 is a vertical sectional view on the line II-II of Figure 1;

Figure 3 is a front elevational view to an enlarged scale of part of the shutter or screen when separated from the cabinet;

Figure 4 is a plan view corresponding to Figure 3;

Figure 5 is a vertical sectional view on the line V-V of Figure 3;

Figure 6 is a view similar to that of Figure 5 but illustrating a modification, and

Figure 7 is a view similar to that of Figure 2 but illustrating a further modification.

As shown in Figures 1, 2 and 7 the cabinet comprises two spaced side walls 1 whose front edges 1a are curved upwardly and rearwardly, a base 2, a rear wall 3, a shallow front wall 4 lying across the forward edge of the base 2, and a top wall 5 extending forwardly for a short distance from the upper edge of the rear wall 3. With this arrangement, the cabinet has an opening lying at the front and extending part-way over the top, the shutter or screen of the invention being designed to act as a transparent or translucent movable closure for this opening. For convenience, it will be assumed that the shutter or screen is transparent, as will usually be the case.

As illustrated in the drawings, the shutter or screen comprises a plurality of flat slats 6 each made of a strip of stiff transparent material such as clear glass or a synthetic resinous material having trans-

parent glass-like characteristics, the material known under the Registered Trade Mark "Perspex" being suitable where the slats are made from synthetic resin.

The slats 6 are arranged edge-to-edge so that a longitudinal edge of one slat lies in close contact with the longitudinal edge of the next slat, and so on. As best shown in Figure 5, the longitudinal edges of the slats are rounded as indicated at 6a so as to enable any one slat to tilt out of the plane of the next, while still ensuring that the edges of the slats will fit closely against one another.

In the modification according to Figure 6, instead of both longitudinal edges of each slat 6 being rounded, only one of these edges is rounded as indicated at 6a, while the other edge is formed with a groove 6b of curved cross-section in which fits the rounded edge of the next slat, thereby allowing the slats to tilt relatively to each other as before, while still keeping the mating edges in contact.

To the end portions of each slat 6 there are applied U-shaped clips 7, any suitable means being employed for securing the clips in position. In one instance, the clips are engaged frictionally with the end portions of the slats. In another instance, a suitable adhesive is used for securing the clips to the slats. In a further instance, the clips are formed with nodules engaging in depressions in the slats. In a still further instance, and as shown in the drawings, the clips are secured to the slats by rivets 8.

The crotches of the clips 7 are spaced from ends of the slats 6 so as to leave holes through which pass flexible cords 9 (Figures 3 to 6), the shutter or screen as a whole thus having a cord running along each end thereof. Each clip 7 may be positively secured to the corresponding portion of its cord 9, as by the use of an adhesive, or by applying or constructing the clip in such a manner that it exerts a non-slip grip on the cord. Alternatively, the clips on the first and last slats 6 of the shutter or screen may be secured positively to the corresponding parts of the two cords 9, the clips on the intermediate slats being merely freely engaged over the remaining parts of the cords.

Owing to the small scale in which Figures 2 and 7 are drawn, most of the slats 6 appear as though they are of arcuate cross-section. The slats are so drawn in these Figures merely as a matter of convenience of illustration, but it will be understood that they are, in fact, of flat shape in cross-section as shown in Figures 5 and 6.

The claims defining the invention are as follows:—

1. A shutter or screen comprising a plurality of slats of transparent or translucent material, the slats being arranged edge-to-edge and all being provided at their ends with U-shaped clips having their crotches spaced from the ends of the slats so as to provide holes through which flexible cords pass, the cords acting to connect one slat to the next and enabling the shutter or screen to be rolled, folded or bent into an inoperative position and unrolled, unfolded or bent back to an operative position. (7th April, 1954.)
2. A shutter or screen in accordance with Claim 1 and wherein a longitudinal edge of one slat lies in close contact with the longitudinal edge of the next slat, and so on. (7th April, 1954.)
3. A shutter or screen in accordance with Claim 2 and wherein the longitudinal edges of the slats are rounded. (7th April, 1954.)
4. A shutter or screen in accordance with Claim 2 and wherein one longitudinal edge of each slat is rounded, while the other longitudinal edge is formed with a groove of curved cross-section in which fits the rounded edge of the next slat. (7th April, 1954.)
5. A shutter or screen in accordance with any one of the preceding Claims, and wherein the cords have a degree of elasticity for the purpose described. (7th April, 1954.)
6. A cabinet, show case, window frame or like article when fitted with a shutter or screen constructed as claimed in any one of the preceding Claims, the shutter or screen acting as a movable closure for an opening in the said article. (7th April, 1954.)
7. The arrangement according to Claim 6 and wherein the cabinet, show case, window frame or like article includes side members formed with grooves in which are slidably engaged the clips on the ends of the slats of the shutter or screen, the grooves thereby acting as guides for the shutter or screen when the latter is moved from closed position to open position, and vice versa. (7th April, 1954.)
8. The arrangement according to Claim 6 or Claim 7 and wherein the cabinet, show case, window frame or like article is provided with a roller on which the shutter or screen can be wound or from which it can be unwound. (7th April, 1954.)
9. The arrangement according to Claim 7 and wherein the grooves are prolonged so that they are of greater length than the shutter or screen for the purpose described. (7th April, 1954.)
10. A shutter or screen having its parts constructed, arranged and adapted to operate substantially as hereinbefore described with reference to the accompanying drawings. (7th April, 1954.)
11. A cabinet with a shutter or screen, the whole being constructed and adapted to operate substantially as hereinbefore described with reference more particularly to Figures 1 and 2 or Figure 7 of the accompanying drawings. (7th April, 1954.)

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References:

Serial No.	Application No.	Classification
—	7,410/22	46.6
—	5,244/22	46.6
—	1,796/21	46.6

The cords 9 can be made of any desired cross-sectional shape and of any suitable flexible material. It is desirable that the cords, besides being flexible, should have a degree of elasticity. Under these conditions, after the clips 7 on the first one of the slats 6 have been connected to the appropriate parts of the cords, the latter can be stretched preparatory to engagement of the clips on the next slat with the cords, and so on, the result being that the longitudinal edges of the several slats will be held in close engagement with each other by the contracting effect exerted by the cords, so that dust is prevented from entering the cabinet when the shutter or screen is in closing position.

In the application of the invention to the cabinet shown in Figures 1 and 2, the outer end portions of the clips 7 are engaged slidably in grooves 10 formed on the inside faces of the side walls 1 of the cabinet, the grooves being arranged close to the curved front edges 1a of these walls and being correspondingly curved. The grooves 10 extend from the upper edge of the shallow part wall 4 of the cabinet, to a point lying beneath the top wall 5 and close to the rear wall 3.

The cords 9 at one end of the shutter or screen extend for a short distance beyond the slat 6 at this end and are anchored to a roller 11 arranged within the cabinet near the junction between the rear wall 3 and the top wall 5; the roller being provided at its ends with axle pins 11a engaged rotatably in the side walls 1 of the cabinet.

With the arrangement described, when the shutter or screen is in closed position, the slat at one end thereof will be engaged with the upper edge of the front wall 4 of the cabinet, while the slat at the other end will be engaged with the roller 11, the shutter or screen thereby acting to close the opening in the cabinet while allowing the contents of the latter to be seen.

When upwardly and rearwardly directed pressure is applied to the slat in contact with the front wall 4, this slat will move upwardly and rearwardly, such movement being transmitted to the next slat and so on by reason of the mutual engagement of the longitudinal edges of the several slats

with one another, and by reason also of the guiding effect afforded by the grooves 10. As the cords 9 are joined at one end to the roller 11, the described movement of the slats will cause the roller to rotate in a direction resulting in the slats being wound one after another on the roller, the cabinet thus being brought to open condition.

To close the cabinet, it suffices merely to pull the exposed slat forwardly and downwardly, such pull being transmitted by the cords 9 to the remaining slats, the roller 11 thus being rotated in a direction for paying out the slats until the shutter or screen has been brought to fully closed position.

The end slat that is adapted to engage with the front wall 4 of the cabinet when the shutter or screen is in closed position, may be made of opaque material and may, as shown in Figures 1 and 2, be provided with handles 12 to facilitate its manipulation.

A suitable form of lock (not shown) may be provided for holding the shutter or screen in closed position, thereby preventing the cabinet from being opened without authority.

As shown in Figure 2, the cabinet may contain a partition 13 acting to hide the roller 11 from view.

In the modification illustrated in Figure 7, the shutter or screen and the cabinet are constructed in much the same manner as before and the same reference characters are used to indicate similar parts. In the present instance, the roller 11 is dispensed with and, instead, the upper ends of the grooves 10 in the side walls 1 of the cabinet are prolonged so that they curve downwardly into vertical portions 10a lying close to the rear wall 3. When the shutter or screen is in closed position, the slat at the rear end thereof lies in the upper part of the grooves 10 so that the portions 10a of the grooves are unoccupied. In other words, the total length of the grooves is greater than that of the shutter or screen. This arrangement allows the slats of the shutter or screen to move into the cabinet, without the use of a roller, when the shutter or screen is brought to open position.